

Implications of Pricing on Existing High Occupancy Vehicle (HOV) Lanes

Preliminary Project Fact Sheet

BACKGROUND AND PURPOSE

Growing traffic congestion has been a top issue in many urban areas. The traditional approach to address congestion has been the addition of general-purpose lanes; however, due to the high cost of adding lanes, and the environmental and societal impacts of creating new capacity, increasing attention is also being paid to strategies that maximize the use of existing highway capacity. As a result, transportation agencies have begun to address mobility needs and congestion through a combination of limited capacity expansion and new operational strategies that manage travel demand and improve transit and other forms of ridesharing. The managed lane concept is an increasingly used approach around the country that combines these elements to make the most effective and efficient use of a highway facility. High Occupancy Toll (HOT) lanes are a form of managed lanes. HOT lane operations introduce toll-paying single occupancy vehicle (SOV) traffic to existing HOV facilities using pricing and other managed lanes techniques to control the number of additional vehicles allowed in the HOV lanes to maintain an acceptable level-of-service (LOS).

Permitting toll-paying SOVs into previously HOV-exclusive lanes allows agencies to utilize excess roadway capacity that would otherwise go unused during peak periods and to earn revenue from tolls paid by SOVs. This, coupled with the “Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users” (SAFETEA-LU) which makes lane pricing more accessible, will allow state DOTs the opportunity to cost effectively transform HOV lanes into HOT lanes.

A variety of issues must be addressed when introducing HOT lanes on existing HOV facilities. The purpose of this project is to produce the products outlined below. These products will provide agencies with a practical guide to assist in the identification of HOV to HOT lane conversion issues and to provide guidance in the planning and implementation of the HOT lane projects.

IMPORTANT QUESTIONS TO BE ADDRESSED:

- *Geometrics* - What special design elements may need to be considered when converting HOV lanes to HOT lanes?
- *Operations Options* - What are the options for HOT lane operation (e.g., time of day; day of week)?
- *Eligibility* - What are the options for eligibility and the impacts of various eligibility requirements?
- *Pricing Strategies* - What approaches and methods are available for pricing?
- *Toll Collection* - What toll collection equipment and systems are required for HOT lane operation?
- *Back Office and Customer Service Operations* - What are the requirements for implementing and operating a back office and interacting with customers?
- *Equity* - What are typical methods, tools, techniques, and procedures to address equity and societal issues?
- *Legislation* - What are typical legislative elements that may need to be addressed?
- *Public Involvement* - What are common methods, tools, and strategies for effective education, outreach and marketing?
- *Institutional and Organizational Relationships* - What are the key considerations that need to be addressed related to the roles and responsibilities of the various agencies, and resources to manage, operate and enforce the facilities?
- *Enforcement* - What special enforcement practices and equipment are needed for HOT lanes?
- *Performance Monitoring* - What are the key elements of an ongoing performance monitoring programs to help identify the benefits accrued and to ensure that the system is being properly enforced?
- *Incident Management* - What are the primary elements of an incident management program for HOT lanes?
- *Costs* - How does an agency determine its overall capital and operational costs?



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SCOPE

The scope of this project is to develop practical products that can be used by agencies as a working guide for the planning and implementation of conversion of existing HOV lanes to HOT lanes. The main product will be a comprehensive technical manual that specifically addresses all steps in the HOV/HOT lane conversion. Additional products will be prepared to raise awareness of the manual and related technical documents.

The key tasks to be covered in this project include the following:

- Review and synthesize literature related but not limited to design, operations, safety, enforcement, pricing techniques, technologies and Intelligent Transportation Systems (ITS) applications;
- Identify and discuss current practices, techniques, implications, issues to consider, and challenges to implementing pricing techniques on various types of HOT lanes;
- Identify the range of appropriate settings/thresholds for pricing operations designed to minimize the impact to HOV operations;
- Identify standard measures to be applied in determining the point at which HOT lanes reach the maximum operational threshold, as well as the conditions that may warrant modification of the pricing or phasing out of HOT lane operations;
- Identify methods and develop procedures for safety and performance measures;
- Identify issues and considerations related to enforcement, including but not limited to enforcement locations, design issues related to such locations, enforcement techniques, and safety;
- Identify outreach and educational strategies to gain acceptance and support from elected officials, community leaders, and general public; and
- Develop a practical manual to provide guidance on strategies, design criteria, safety and enforcement considerations, tools and techniques that can be used by practitioners engaged in the planning, design, implementation, operation, and performance monitoring of pricing on conversion of existing HOV lanes.

PRODUCTS

Over the course of the Implications of Pricing on Existing High Occupancy Vehicle Lanes project, HNTB and Booz Allen Hamilton will develop the following products:

- Annotated Outline
- Technical Manual
- Project Fact Sheet
- Subject Presentation
- Primer
- Distribution Plan

CONTACT INFORMATION

Federal Highway Administration

Mr. Neil Spiller
(202) 366-2188
neil.spiller@fhwa.dot.gov

HNTB Corporation

Mr. Gregory A. Le Frois, PE
(973) 237-1650
glefrois@hntb.com

HOV Pooled Fund Study

Dr. Ming-Shuin Lee
(612) 373-6335
ming_shuin_lee@urscorp.com

